

VIRTUAL SOCIO-CULTURAL COLLABORATIVE LEARNING FOR EFL SPEAKING SKILLS CLASSES

Abstract

Virtual sociocultural collaborative learning (VSCL) is an approach to techno pedagogical learning. This research intends to verify how VSCL might influence English as a foreign language (EFL) speaking in classrooms. This study employed a quasi-experiment with a pre-test and post-test time-series design for proper verification. The results, measured by the application of the cognitive Function Scale (ACFS), confirmed that VSCL had an effective influence. The ACFS is used to verify the homogeneity level in classification, perspective taking, a verbal test, and a brief hearing test. Additionally, VSCL has the potential to motivate speaking components, namely (1) grammar, (2) fluency, (3) accuracy, and (4) comprehension ($t\text{-count} = 0.000$ less than $t\text{-table} = 0.68$). This approach is recommended for EFL teachers who embrace diverse zones of proximal development (ZPD) in the classroom.

Keywords: Socio-cultural, virtual, collaborative, speaking

INTRODUCTION

According to Vygotsky and Cole (1978), learning is a social process, and the social environment has a significant impact on cognitive development. Our contacts with and contributions to society serve as temporary scaffolding until we assimilate our experiences and develop higher-order cognitive skills. We can construct a proper quasi-experiment with a time-series design for the pre-test and post-test to adequately verify individual endeavors.

Sociocultural learning theory contends that social contact is critical to learning. This is not surprising, given that the majority of our current knowledge and skills were acquired with the assistance of a support system until we were able to master them on our own (Volman, 2021). Regarding speaking skills, Bailey and Savage (1994) declared that one of the principles is to employ collaboration in pair work while providing learners with more opportunities.

Similarly, Goh and Burns (2012) asserted that teaching speaking emphasizes cognitive factors and social interaction, called the holistic approach. It considers language learners' mental, affective (emotional), and social demands as they strive to improve their speaking abilities. The socio-cognitive approach to language learning is a socio-cognitive activity. This method teaches four essential aspects of critical learning in speaking and writing. Similarly,

Thornbury (2005) argued that sociocultural knowledge is something that all learners should be aware of. Sociocultural knowledge concerns a community's values and behavioral standards and is communicated through language.

Extra-linguistic and linguistic sociocultural knowledge are both possible. In language use, Bailey and Nunan (2005) state that mastery of speaking English is a priority for many second language (SL) and foreign learners (FL).

According to the sociocultural theory, learning to speak is mediated by social and cultural activities. Teaching speaking is predicated on creating a speaking culture in the classroom, and schools must become speaking classrooms. In other words, if this type of

speaking activation is regularly used in courses, learners will become more confident speakers (and their speaking abilities will improve). Technology can be used by learners to (1) cooperate with a task, (2) communicate, (3) exchange resources, (4) participate in productive collaborative learning processes, (5) co-create, (6) monitor and regulate collaborative learning, and (7) identify and build groups and communities (Jeong & Hmelo-Silver, 2016).

However, the effectiveness of collaborative learning involves activating, motivating, and encouraging learners to engage in interactive conversations (Thornbury, 2005). As mentioned previously, school language learning simulates reality only, especially for learners in remote areas. On the other hand, it indicates an empirical and evidence gap compared with the learners' speaking fluency in the study respondents in English Language Education. Teachers and learners face complex problems, such as limited infrastructure and sociocultural background differences. Of the 30 participants in the study, 24 (80%) felt that they were low fluent. In highlighting those gaps, the study intensely cultivated socio-cultural virtual collaboration, a fascinating approach to overcome these gaps; the study fully designed a counter research question: how might virtual socio-cultural collaborative learning influence EFL speaking skills classes? In dealing with the most significant potential, the study investigated learners' speaking results between pre-test and post-test and explored teachers' perspectives by conducting semi-structured interviews.

LITERATURE REVIEW

Socio-Cultural Learning (SCL)

Sociocultural learning (SCL) may be potentially applied to the school environment. According to McCullough Chavis (2011), interventions based on the social learning theory are appropriate for virtual collaboration interventions that focus on cognitive thinking, attitudes, and communication skills from a cultural perspective. The study also examines how to teach proper behavior to children by compensating for the family's difficulties and concentrating on the family's strengths (social and cultural). Theoretical and behavioral approaches to social learning are relevant in various professions. This suggests that observing people learning new facts and actions, imitation, or modeling (Ardiningtyas, et al., 2023) can explain multiple human activities. The foundations and basic ideas of behavioral therapy can be found in social learning theory.

Moreover, (1977) emphasized that social learning theory highlights the importance of vicarious, symbolic, and self-regulatory processes in psychological functioning. Shifts from philosophical perspectives incorporate new concepts into significant traditional methodologies. Accepting that human thinking, emotions, and conduct are all intertwined can be a substantially impactful observation. The creation of observational paradigms for studying the power of socially mediated experience was aided by first-hand experiences. The central role of the self-regulatory process learning theory is a distinguishing trait (van Andel et al., 2021). People are not only passive recipients of external stimuli; they choose and organize stimuli incentives through contact with them. They create inducements and consequences and control their actions and deeds. As a result, self-produced influence was included among these determinants. Self-regulatory paradigms (Flanagan & Symonds, 2022) from the research were sparked by the recognition (Pahl-Wostl et al., 2008) of people's self-directing abilities, where individuals act as the primary agents for inducing a change in their learning process and altering their sociocultural status. Social learning views human behavior

as a continual reciprocal interaction of cognitive (Mischel, 1973; Wild et al., 2022), behavioral (Lian et al., 2022), and environmental variables (Beaudoin et al., 2022). The opportunity for humans to influence their destiny and boundaries of self-direction (Stephen & Rockinson, 2021) were both found within the reciprocal determinism process. People are neither weak objects dominated by environmental circumstances nor free agents who can become whatever they want in the reality of human functioning. The people and their surroundings were then determined by one another (Butarbutar, Weda & Nur, 2023).

Virtual Speaking Collaboration

This paper was written after the worldwide COVID-19 pandemic commenced at the end of 2019, because learning and teaching systems have significantly shifted (Butarbutar & Leba, 2023, Marnina et al., 2023). Teachers' perspectives on teaching EFL speaking virtually: A case study of COVID-19 pandemic survival. American Journal of Social Sciences and Humanities, 8(1), 46-54.. Previously, only a few institutions implemented blended learning (Bordoloi et al., 2021; Singh et al., 2021) processes worldwide because tools such as computers, Internet connections, and educators' computer skills are imperative. Teachers work collaboratively not only face-to-face (F2F) beyond the classroom but also at a distance, as defined by Kopp et al. (2012) and Herrera-Pavo (2021). They said that collaboration occurs at three different levels: schools, universities, and higher education.

Accordingly, virtual sociocultural collaborative learning (VSCL) is a new learning approach involving learners, teachers, and groups of learners working in collaboration, simultaneously edited via Internet sources (Herrera-Pavo, 2021). According to Akyol and Garrison (2008) and Weber et al. (2014), VSCL is conceptually grounded and refers to three types of presence: cognitive, social, and teaching. The VSCL potential brings workgroups together virtually over great distances for purposeful achievement by guiding the absence of presence. Weber et al. (2014) identified the following characteristics of VSCL:

- a) VSCL is based on small-group collaboration. Consequently, different (educational) group learning strategies must be adapted for VSCL scenarios. This necessitates a precise specification of relevant activities, typically based on genuine inquiries and problems from field (professional) practice.
- b) Information and communication technologies are used to facilitate virtual collaborative learning. Instead of face-to-face meetings, learners can interact directly in virtual environments. Consequently, it blends the power of interactive learning with the adaptability of technology. The prerequisites for virtual interactions, on the other hand, differ significantly from face-to-face interaction. Therefore, it is essential to pay close attention to how people connect with each other.
- c) VSCL settings necessitate an exact and systematic approach because of their complex organizational problems. The learning experience must be prepared and its objectives must be well-defined.
- d) Complicated processes and learners' active participation require strong guidance. However, VSCL focuses more on social interaction enhancement than information transmission by utilizing technology (Ertl, 2010).

Include current knowledge, including substantive findings, as well as theoretical and methodological contributions to the topic. A literature review surveys books, scholarly

articles, and other sources relevant to a particular issue, area of research, or theory, and by so doing, provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated.

Speaking components; Fluency

According to Thornbury (2005), fluency does not consider the speed when someone solely produces a word or the capacity to speak quickly but also includes pausing. Pausing refers to the interlocutor's consideration of the fluency of speakers. In contrast, the speaker's fluency is determined by the frequency of pausing rather than the length of the pauses themselves.

In addition, (Hedge, 2001) states that fluency has two definitions. The first is the ability to link speech units with the facility without strain, excessive slowness, or undue hesitation. What is meant by Communication refers to fluency in language teaching and evaluation methods. Second, Hedge provides a more holistic view of fluency than natural language use, which is more likely to occur when speaking activities focus on meaning, and negotiation speaking strategies can be used to increase overt correction. Fluency refers to the quantitative elements of fluency in speech such as speed, pausing, and hesitation. By contrast, perceived relates to listeners' judgments about speakers' cognitive fluency based on their views of the speech they heard. Furthermore, Hedge (2001) claims that fluency refers to language production and indicates a reserve for speaking. This can quickly lead to fast-joined addresses, inappropriate slurring, or unneeded reluctance. According to those who distinguish it from strategic competence, fluency is a component of communicative competence; fluency refers to the ability of speakers to utilize their linguistic and pragmatic competence, whereas strategic competence presumes a lack of available information. She divided fluency into three parts: lexical, linguistic, articulatory, and vocal.

Similarly, Bailey and Nunan (2005) defined fluency as the ability to speak fluently, confidently, and at a tempo compatible with the standards of the native speech community. They highlighted that when they talk about fluency, they mean babbling easily and do not need to use language correctly. It entails the command of the linguistic code or the laws of the language, as opposed to accuracy. On the other hand, speaking a language fluently means speaking fluently and accurately, while also being original and spontaneous.

Nonetheless, we all know someone about whom it is said that "you can't get a word in edgewise," and we all have felt absolutely "tongue-tied." The usual situation is somewhere in between. Speakers use several "tricks," or production procedures to give the impression of fluidity and compensate for speech production's attentional demand. Thornburrry (2005) stated that fluency might be indicated by the following:

- 1) length of pausing,
- 2) filling of pauses,
- 3) pauses of meaningful transitions,
- 4) use of any syllable or word while pausing.

Accuracy

According to the online Merriam-Webster dictionary, accuracy is free of faults or inaccuracy. In terms of accuracy or correctness, Ellis and Yuan (2003) argued that there are several alternatives to accuracy metrics, just for complexity. Two of the most noticeable are the percentage of error-free sentences and number of errors per (usually) 100 words. The

recently introduced error gravity can be supported theoretically and practically (Foster & Wigglesworth, 2016). Perhaps the first has amassed most of the findings of any existing study, and, as a result, one can trust it. The second alternative offers more appropriate opinions (Mehnert, 1998). Third, fluency is more valid because treating all mistakes as equally serious is ill-advised – some have an enormous impact on communication compared to others.

According to Wang (2014), speaking accuracy assesses how effectively the language generated follows target language norms, including incorrect pronunciation, vocabulary, and grammar. Speaking fluency is the ability to construct a spoken discourse “without excessive stopping or hesitation.” Too many hesitations and pauses in speech may impair fluency and depress the speaker (Ellis & Yuan, 2003; Skehan et al., 1996). Similarly, Husen et al. (2012) define “accuracy” as “correctness,” which is the degree to which an L2 learner’s performance (and the L2 system that supports this performance) deviates from a norm (often the native speaker).

Discourse competence

An essential primary grammatical component in communicative competence is explored in the explanation above in terms of fluency; Hedge (1993), argues that international contacts should help EFL learners acquire conversational competency. To keep communication together in a meaningful fashion, the norms of cohesion and coherence should be applied in any conversation, whether official or informal. Speakers must perceive and process the meaning of their counterparts’ utterances and then actively respond (Richards and Renandya, 2002) and (Scarsella and Oxford, 1992). The belief that grammatical structures are the basic building blocks of language has encouraged the popularity of mechanical grammar drills in language training, which are still prominent in many parts of the world. Individuals are thought to utilize language effectively if they have acquired all the grammar rules. However, this approach is insufficient for effective communication.

METHOD

Participant Characteristics

For a more profound and broadened investigation, this study employed 30 learners in the first academic year of the English Education Department, Faculty of Teacher Training and Education, University of Musamus Merauke, Papua, Indonesia. They consisted of twenty-two females and eight males. Five participants had never taken a course before. Thus, the learners had never previously used zoom applications in the learning process. Furthermore, prior experience indicated that learners were involved in virtual learning and teaching while they fully attended traditional face-to-face interactions in the classroom.

Data Collecting

The VSCL study included a variety of instruments, including virtual zoom experiments, observations, teacher journal reflections, and semi-structured interviews (see Appendices) (Drever, 1995) and (Lasley, 1992). An online interview was conducted with the learners to understand their perceptions during the virtual learning process. The study employed a teacher journal reflection checklist to note learners’ participation during speaking activities observation to become acquainted with VSCL (eight weeks). It assists researchers in interpreting and verifying the responses of participants (Hatton & Smith, 1995). The following are the steps taken before starting a collective project.

Week 1: The researcher delivered an introductory project lecture over eight weeks. The researcher addressed an important issue concerning learners' difficulties in learning English at the higher education level, notably at the University of Musamus Merauke in Papua. The solution was provided by the course's basic competency and was highly relevant and powerful as a natural learner's problem to be solved. Following this, learners were given an oral pre-test to familiarize themselves with their ZPD level, and they may have mixed and worked with them correctly.

Week 2: The researcher randomly divided the learners into five groups based on their pre-test results during this class meeting. The six groups comprised one group. The researcher then described how a poster presents presentation-speaking educational strategies. Similarly, researchers have chosen their themes randomly. Collaboration between peer scaffolders is required for the design project. The supporting tasks to be accomplished and the equipment and resources required for project completion, including timeline finishing, are all discussed during this session. All the learners were invited to show their posters in front of the classroom at the end of the meeting.

Week 3–7: Learners worked in pairs or groups to design, develop, and present poster presentations. (1) 21st-century skills, (2) intercultural competencies, (3) creative economy, (4) tourism, (5) Teaching English as a Foreign Language (TEFL) technologies, (5) learning learner exchange, (6) government, and (7) entertainment are among the themes covered. Virtual collaborative learning is facilitated through the Zoom application to accommodate speaking projects in the class. As seen in Figure 1, the EFL teacher serves as the co-host to guide VSCL activities and learners as participants in five groups to create a project. The procedure is illustrated in figure 1 for clarity and understandability.

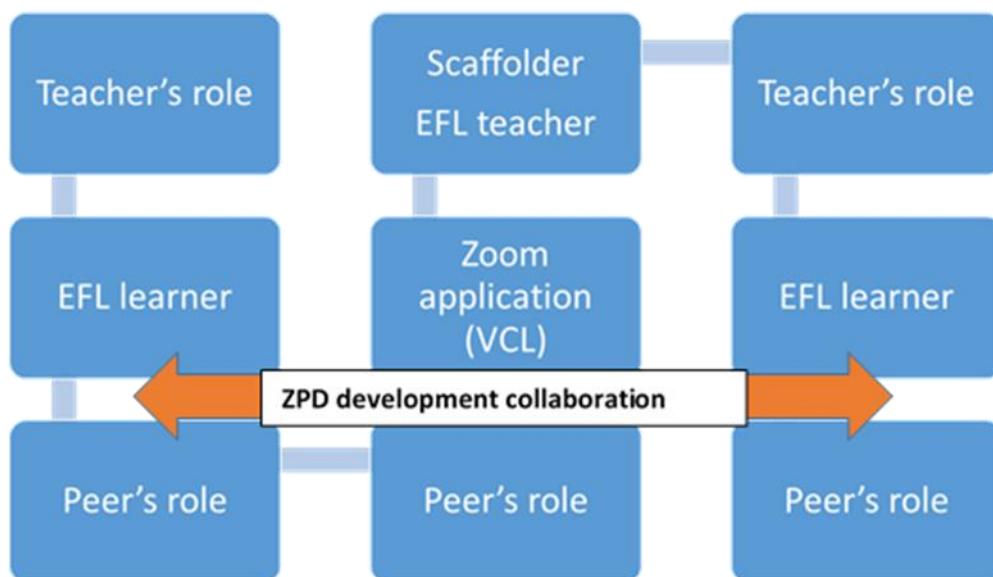


Figure 1. VSCL layout using Zoom meeting application

Week 8: Each group individually displayed their posters during the final project. Considering the learners' speaking abilities during the VSCL experiment, this study adopted and employed an assessment coined by Lidz and Jepsen (2000) as the Application of Cognitive

Function Scale (ACFS). This taxonomical assessment contained four cognitive stages of development.

- 1) Classification; the measuring of the learner's abilities and classifying them according to their homogeneity level;
- 2) Perspective-taking: A test that assesses the learner's capacity to communicate with another person in a way that demonstrates an understanding of the learner's perspective.
- 3) Verbal testing; this test assesses the learner's ability to form a strategy for finishing a typical task;
- 4) Brief-term hearing assesses learners' ability to retrieve and sequence information shortly after hearing a story (Lidz & Gindis, 2003). To improve learners' achievement, empirical data that gained taxonomical assessment were noted in the observation and teacher's journal reflection checklist.

Analysing Data

The ACFS results were analyzed to verify the null hypothesis that there is no difference between pre-test and post-test learners' abilities for classification, perspective taking, verbal testing, and short-term auditory comprehension. This was examined using descriptive analysis. All gathered data from semi-structured interviews, observations, teacher's journals, semi-structured interviews, and peer-collaboration were analyzed by content analysis of six cognitive dimensions, namely perseverance, frustration tolerance, adaptability, motivation, engagement, and responsiveness, all of which are essential qualities (Brown et al., 2003). Furthermore, the teachers' journal reflection was verified in line with the curriculum guidelines for teachers.

In addition, learners' speaking increases were analyzed through a statistical description by comparing the mean pre-test and post-test scores, focusing on (1) grammar, (2) fluency, (3) accuracy, and (4) comprehension (Goh & Burns, 2012). The conclusive null hypothesis (h_0) is rejected for further analysis if the t-count is higher than the t-table and vice versa ($t\text{-table} = 0.68$). Provide sufficient details to allow your work to be reproduced. Methods already published should be indicated by a reference; only relevant modifications should be described.

FINDINGS AND DISCUSSION

How might virtual socio-cultural collaborative learning influence EFL speaking skills classes?

Our study investigated learners' speaking results between pre-test and post-test, focusing on grammar, fluency, accuracy, and comprehension. The minimum, maximum, mean, and standard deviation are presented (see Tables 1, 2, and 3).

Table 1. Table 1. Pre-test speaking results in descriptive statistics

	Total Learners	ofMinimum	Maximum	Mean	Std. Deviation
Grammar	30	10	30	18.67	7.761
Fluency	30	10	30	17.33	6.915
Accuracy	30	10	30	19.00	7.120
Comprehension	30	10	30	18.33	6.989
Valid N (list-wise)	30				

Table 2. Post-test speaking results descriptive statistics

	Total Learners	ofMinimum	Maximum	Mean	Std. Deviation
Grammar	30	20	40	33.33	5.467
Fluency	30	20	40	30.67	5.208
Accuracy	30	20	40	30.33	6.687
Comprehension	30	30	40	33.67	4.901
Valid N (list-wise)	30				

Table 3. Paired sample test speaking result

	Paired Samples Statistics	Paired Samples Correlations	Paired Samples Test
Pre-test	Mean = 56.73 Std. Deviation = 7.187 Std. Error Mean = 1.312	Correlation = 0.754	Mean = -24.267 Std. Deviation = 5.010 Std. Error Mean = 0.915
Post-test	Mean = 81.00 Std. Deviation = 7.110 Std. Error Mean = 1.298	Sig. = 0.000	95% Confidence Interval of the Difference Lower = -26.137 Upper = -22.396 T = -26.530 Sig. (2-tailed) = 0.000

Considering the essential speaking components, the learners' achievement is drawn between the pre- and post-tests (see Tables 1, 2, 3). As can be seen from the tables, the learners, by comparing the achieved t-count, claimed the accommodated null hypothesis (H_0); (t-count = 0.000, less than the t-table = 0.68). In contrast, VSCL are effective in developing EFL speaking skills. To confirm this hypothesis, we conducted linear descriptive statistical analysis.

Application of Cognitive Function Scale (ACFS) Results

Table 4. Pre-test ACFS descriptive statistics.

	Total of learners	Minimum	Maximum	Mean	Std. Deviation
Classification	30	2	4	3.03	0.912
Perspective-taking	30	2	4	3.19	0.833
Verbal test	30	1	4	3.06	1.237
Auditory	30	1	2	1.52	0.508
Valid N (list-wise)	30				

Table 5. Post-test ACFS descriptive statistics

	Total of Learners	Minimum	Maximum	Mean	Std. Deviation
Classification	30	3	4	3.94	0.250
Perspective-taking	30	3	4	3.71	0.461
Verbal test	30	2	4	3.74	0.514
Auditory	30	1	4	3.26	0.631
Valid N (list-wise)	30				

Table 6. Paired sample ACFS results

	Paired Samples Statistics	Paired Samples Correlations	Paired Samples Test
Pre-test	Mean = 3.26 Std. Deviation = 0.250 Std. Error Mean = 0.045	Correlation = 0.315	Mean = 0.226 Std. Deviation = 0.677 Std. Error Mean = 0.089
Post-test	Mean = 3.94 Std. Deviation = 0.631 Std. Error Mean = 0.092	Sig. = 0.000	95% Confidence Interval of the Difference Lower = 0.043 Upper = 0.732 T = 3.981 Sig. (2-tailed) = 0.000

We continued to see the learners' VSCL results during speaking practice in the classroom in response to the research question indicated above and the study's goal. We highlight the paired sample statistics, paired sample correlation, and paired sample tests in tables 4, 5, and 6. To the best of our understanding, if the t-count is more significant than the t-table, the null hypothesis (H_0) is rejected and vice versa ($t\text{-table} = 0.68$). In this fashion, we asserted that VSCL is critical for developing learners' speaking skills.

In response to the research question, how sociocultural virtual collaborative learning might influence EFL speaking skills in classrooms: To verify the research hypothesis, the study provided a statistical description of EFL speaking skills reflecting sociocultural theory. The results were verified in four of the six dynamic assessments of the ACFS introduced by Lidz and Jepsen (2000). Comparing and observing tables 4 and 5, the study claimed that VSCL significantly improved EFL speaking skills.

Semi-structured Interview Results

The study involved 30 learners and one teacher who conducted semi-structured interviews. Because semi-structured interviews are more flexible and generate more valuable data, they are more useful. This approach recognizes how a researcher might be provided with information on whether learners' and teachers' cognition is more interactive during VSCL in EFL speaking classrooms. The following excerpt explores learners' and teachers' perspectives.

“From my point of view, VSCL are strongly recommended for anyone who wants to develop their speaking abilities. The learning and teaching process was based on my experience during the COVID-19 pandemic in Indonesia over the last two years. Many teachers and parents denied using this learning method. However, the urgent situation forced and shifted the process; this is called force majeure. As an English teacher, I applied Zoom to continue my teaching activities. In doing so, I divided the learners into groups to collaborate on a speaking project with the chosen topic. At the end of the meeting, I invited the students to present their group projects. To sum up, VSCL builds learners' self-regulation in learning and

higher confidence due to working collaboratively, not alone, which are key strengths of VSCL from my perspective.”

[Teacher#1, reformulated from a semi-structured interview sheet]

Sociocultural learning theory, also known as co-constructivist learning theory, fundamentally focuses on how a person learns with the help of others in a zone of their limitations, namely, the Zone of Proximal Development (ZPD) or the Zone of Proximal Development and Mediation. Often, a child's development necessitates the help of others to let the child comprehend something or overcome challenges (Bandura and Walters, 1977;Yaghoubi & Farrokh, 2022). Meaningful activities within higher mental functions are initially socially mediated, and to form natural impulses into higher mental cognition, we need psychological tools used within mediation. The study noted the following during a VSCL learner's experience.

“In light of achieving a great deal of the learner's adaptability with VSCL, in the first meeting of lecturing I felt anxious to speak with my classmates. My speaking ability was categorized as low; however, after my teacher placed me into other groups at a higher level than me, I had a little more confidence day by day. From my perspective, this approach boosted zone proximal development (ZPD). This learning cycle was shifted to all the pairs. In this case, I could observe and learn a pair's speaking culture, such as an open-ended conversation, interrupting others while speaking, etc.”

[Learner #12, reformulated from a semi-structured interview sheet]

Teacher's Journal Reflection of EFL Speaking Culture

Considering previous debates and studies, it can be concluded that sociocultural theory allows researchers to explore individuals' learning and how their learning is influenced by the setting in which interaction is vital to the learning process. As stated previously, the main goal of this study is to investigate how sociocultural virtual collaborative learning might influence EFL speaking skills classes. This study examines the perspectives of learners and instructors that deal with the most potential. Vygotskian sociocultural theory-based schools take steps to enrich the social setting of learning in English.

To better elaborate on the research, how might sociocultural virtual collaborative learning influence EFL speaking skills classes? The teacher's journal reflection provides observations of the learner's achievement, in line with sociocultural dimensions and speaking components. It aims to help teachers observe a learner's progress in terms of their ZPD day by day, so that teachers can rely on their pair work.

Table 7. Teacher's journal reflection of EFL speaking VSCL

Sociocultural dimensions	Indicators in the EFL classroom culture	Teacher's feedback		
		Good	Average	Poor
Cognition	Individual's perception	V		X
	Attention	V		X
	Coding		V	X
	Retrieving		V	X
	Memorization	V		X
	Analyzing	V		X
	Synthesizing		V	X
Perseverance	Self-directed & self-regulatory learning	V		X
Frustration-tolerance	Interpersonal interaction	V		X
Adaptability		V		X
Motivation		V		X
Engagement	Involving & contributing to solving group assignments collaboratively	V		X
Responsiveness	Each learner is given ample opportunities in case the group functions properly	V		X
Speaking components			V	
Grammar			V	
Fluency			V	
Accuracy			V	
Comprehension			V	

Table 7 shows that VSCL influences learners' cognition process and individuals feel themselves practicing. The desired activity promotes skill and retention, which is of great interest in the mediated activity, and media encompasses material tools, including collective orientation. In shaping the child's development and learning, it points to the crucial role played by parents, teachers, peers, and the community in defining the types of interaction occurring between children and their environments. As a result, the "obvious" individualistic identification of sociocultural engagement and ZPD during EFL speaking is achieved. Similarly, Souto-Manning (2006); recognizes that the teacher's journal effectively reflects the learner's behavior, atmosphere, management, and assessment during a classroom observation. Indeed, this instrument reflects the qualities of the course teaching materials and strategies employed within the learning process or bridging socio-cultural construction (Chien, 2013). It can be seen obviously in the following reflection quotation:

[I wrote of learner#12; her speaking ability was better than before attending VSCL classes. This was proven by her increased ZPD after being paired with a different – shifted – group four].

Regarding cognition, it might be observed that people's self-directing abilities sparked the development of self-regulatory research paradigms in which individuals are the primary agents of change. The agency of learning is challenged through interpersonal communication and symbolic representation.

We endorse Weber et al. (2014), who found that some characteristics of collaborative learning are based on small-group collaboration. As shown in Figure 1, EFL learners' speaking performance increased, which was supported by peers' and EFL teachers' roles. However, this study focuses on sociocultural learning from some essential dimensions, ZPD practices, and speaking components in virtual collaboration (Butarbutar, 2021b).

Furthermore, our study highlights the need for task flexibility (Hassett, 2008) by providing different options for learners. Sociocultural flexibility agrees with Willems (2005), who argued that this approach can be achieved ubiquitously. We claim that this strategy aligns with our virtual collaboration study, which is accessible anywhere and anytime. We

also claim that the VSCL approach can be implemented for particular needs or in slow learners' cases by classifying learners in the first meeting according to the level of their speaking abilities. Hence, the EFL teacher puts them in pairs, facilitating their cognitive. This, despite the cognitive impairments that force the teacher to work at a slower speed, the open and unstructured nature of the assignments and the ability to organize work autonomously within the group allow group work to be considerably more fruitful. This testimony supports the premise that the flexibility of collaborative tasks, derived from a universal learning design, promotes inclusive education (Arcidiacono and Baucal, 2020) since they allow for various contributions to group efforts.

Additionally, our research findings agree that social learning theory emphasizes the interdependence of other people, environmental impact, self-regulation, reinforcement, and learning expectancy (Jaramillo, 1996; Kameda and Nakanishi, 2003; Scott and Palincsar, 2013). However, we reformulate this theory techno-pedagogically to overcome the dynamic growth of technology (Butarbutar, R. et al., 2021) and (Butarbutar, R., 2021b). However, this is consistent with the findings of Hall (2007). He claims that Vygotsky's social learning theory goes online or virtual, implementing a course assignment in online submission. We strongly agree with Coleman (1961) and McDill and Rigsby (1973) that peer groups are essential for achieving academic outcomes. Considering our study, the increase in learners' speaking performance was significantly influenced by mutual support, commitment, motivation, and energy. Their research also offers practical advice to teachers and educators in designing and facilitating collaborative learning in virtual and face-to-face settings. Both task- and group-related contacts are required for successful cooperative learning. Learners need time and space for group activity planning, coordination, and conversations that, backed up by a teacher, make valuable additions, such as asking for clarification. It is imperative to ask questions and provide theory-based and well-argued opinions.

We agree with Kopp et al. (2012) and Herrera-Pavo (2021) that virtual collaboration is beneficial and should be implemented in schools and universities. In this spirit, learners have not inquired whether the teacher provides face-to-face (F2F) communication at the college, but it is irrelevant. Group formation enhances self-regulation of sociocultural qualities (Ztürk & Akrolu, 2021) and self-awareness (Nilson, 2013) while also potentially improving speaking accuracy. Moreover, our findings confirm McCullough and Chavis's (2011) analysis, suggesting that sociocultural learning (SCL) could be utilized in the classroom. Interventions based on the social learning theory are suited to culturally focused virtual collaborative interventions that focus on cognitive thinking, attitudes, and communication skills (Abdullah et al., 2023).

In addition, schools of thought exist (Brown et al., 2003; Burns, 1998; Goh & Burns, 2012; Harmer, 2007; Luoma, 2004; Richards, 2006; Thornbury, 2005). They stated that one of the fundamental approaches to teaching speaking is to collaboratively activate the intellect of learners. Perseverance, frustration tolerance, flexibility, motivation, engagement, and responsiveness are cognitive consequences that can produce words and compel learner interactions within pairs or groups. The VSCL arrangement (shown in Figure 1) may be an effective strategy for improving learners' speaking, sociocultural aspects, and speaking components. In this regard, as scaffolders, EFL teachers also monitor and evaluate learners' progress. To highlight their progress, reflection in the EFL teacher's diary is no longer a guide for altering group formation. We confirm ZPD through cooperation, as in Azir (2019) and Dunn and Lantolf (1998). Moreover, it stimulates the role of peers and group members. ZPD collaboration verifiably boosts social-cultural interactions while creating a welcoming and enjoyable learning environment. This type of environment includes both cooperative and

competitive oral activity. This setting might serve as a starting point for encouraging students to acquire English as a second language.

In contrast, we disagree with Dung (2020), who argued that there is a lack of peer interaction, time, and opportunities to practice communication with classmates and teachers in a virtual classroom. These are disadvantages of virtual collaborative classes. However, our empirical findings prove that learners' sociocultural esteem is built up interactively with their peers. Simultaneously, their speaking skills improved. Regarding our research question, study purposes, and findings, we can claim that virtual collaborative learning is effective and can encourage, engage, and promote speaking skills in virtual classrooms.

CONCLUSION

We agree with interdependence theory, which emphasizes socio-cultural interaction as the main ingredient of collaborative success, both conventionally and virtually (Chadee, 2011). VSCL has the potential to be used in EFL speaking skills classes because some empirical studies emphasize (1) cognitive control, (2) self-regulation, (3) systems of interactive regulation, and (4) effective class management. This study implies that behavior changes if influenced by vicarious collaboration. Vygotsky's (1978) theory fosters a learning environment in which the teacher participates as a facilitator of meaning formation during the instructional process, strengthening the reciprocal relationship between learners and instructors. The use of sociocultural theory concepts in classes can help learners meet particular communicative goals. It has been theorized that such an environment encourages learners to take responsibility for their learning, regulate their learning attainment, and examine themselves. Learners can establish a crucial set of strategies applicable to language learning and communication by defining reachable communicative goals through increased flexibility and adaptability (Butarbutar et al., 2019; (Leba et al., 2021).

Accordingly, maintaining a teacher's journal during VSCL can help record and evaluate learners' academic and sociocultural achievements. This will be required and become a prerequisite for future work. To perform better, the teacher's administration, such as assessment, instruction, evaluation, and remediation forms, is crucially provided before entering the classroom. The study suggests that to be successful in the EFL speaking process, teachers need to pay more attention to learners' socio-cultural, extra-linguistic abilities, and interpersonal communication competence, both face-to-face and virtually.

This study involves technological, pedagogical, and societal issues that control speaking abilities. Again, proper group formation is crucial. Some learners emphasized the importance of getting to know one another before creating groups. Nonetheless, as evidenced by the post-test and learners' perceptions, the existence of earlier social institutions can interfere with role assignment and decision-making. We feel that developing a group formation approach is vital, as it allows learners to meet and consider their interests and concerns regarding course content. Collaborative learning has immense potential in higher education, particularly in classroom activities, as it promotes the development of skills related to interaction, resulting in more effective learning processes. The findings of the study underline the necessity of meticulous preparation, an adequate dynamic for building collaborative groups, the relevance of learner behavior connected to everyday usage of technologies, a change in the teaching role, and autonomy in learning management. However,

this study must use a large sample size to determine the complexity of specific speaking skills. Thus, integrated learning with action research is recommended for future research.

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REFERENCES

Abdullah, A., Nur, S., Butarbutar, R., & Bawawa, M. (2023). Social-Psychological Issues in EFL Speaking Class based on Collaborative Learning. *VELES (Voices of English Language Education Society)*, 7(1), 01-11.

Akyol, Z., & Garrison, D. R. (2008). Developing a community of inquiry over time in an online course: Understanding the progression and integration of social, cognitive and teaching presence. *Journal of Asynchronous Learning Networks*, 12, 3–22.

Arcidiacono, F., & Baucal, A. (2020). Towards teacher professionalization for inclusive education: Reflections from the perspective of a socio-cultural approach. *Eesti Haridusteaduste Ajakiri. Estonian Journal of Education*, 8(1), 26–47.

Ardiningtyas, S. Y., Butarbutar, R., Weda, S., & Nur, S. (2023). Online scaffolding behavior for speaking EFL improvement: narrative inquiry issues. *Interactive Learning Environments*, 1-11. <https://doi.org/10.1080/10494820.2023.2207608>

Bailey, K. M., & Savage, L. (1994). New ways in teaching speaking.

Bandura, A., & Walters, R. H. (1977). Social learning theory (1). Englewood cliffs Prentice Hall.

Beaudoin, C., Mistry, I., & Young, N. (2022). Collaborative knowledge mapping to inform environmental policy-making: The case of Canada's Rideau Canal National Historic Site. *Environmental Science & Policy*, 128, 299–309.

Bordoloi, R., Das, P., & Das, K. (2021). Perception towards online/blended learning at the time of Covid-19 pandemic: an academic analytics in the Indian context. *Asian Association of Open Universities Journal*.

Brown, J. S., Heath, C., & Pea, R. (2003). Vygotsky's educational theory in cultural context. Cambridge University Press.

Butarbutar, R., Weda, S., & Nur, S. (2023). Guided-blended collaborative learning in speaking class: Voices of non-native English teachers and students from eastern Indonesia. *American Journal of Education and Learning*, 8(1), 88-99.

Butarbutar, R., & Leba, S. M. R. (2023). Teachers' perspectives on teaching EFL speaking virtually: A case study of COVID-19 pandemic survival. *American Journal of Social Sciences and Humanities*, 8(1), 46-54.

Butarbutar, R., Uspayanti, R., Manuhutu, N., & Palangngan, S. T. (2019). Analyzing of puzzle local culture-based in teaching english for young learners. *IOP Conference Series: Earth and Environmental Science*, 343(1), 12208.

Butarbutar, R. (2021a). Learner's perception of task difficulties in technology-mediated task-based language teaching. *Englisia: Journal of Language, Education, and Humanities*, 9(1), 129–144.

Butarbutar, R. (2021b). Using Mobile-Assisted Language to Encourage EFL Learning among Indonesian Learners of English. *LINGUISTICA ANTVERPIENSIA*, 766–779.

Butarbutar, R., Sauhenda, A. F., Marnina, H. R. E., & Wahyuniar, S. M. R. L. (2021). Challenges and Opportunities of Accelerated Digital Literacy during the COVID-19 Pandemic. *Hong Kong Journal of Social Sciences*.

Chadee, D. (2011). *Theories in social psychology*. John Wiley & Sons.

Chien, C.-W. (2013). Analysis of a language teacher's journal of classroom practice as reflective practice. *Reflective Practice*, 14(1), 131–143.

Coleman, J. S. (1961). *The adolescent society*.

Drever, E. (1995). *Using Semi-Structured Interviews in Small-Scale Research. A Teacher's Guide*. ERIC.

Dung, D. T. H. (2020). The advantages and disadvantages of virtual learning. *IOSR Journal of Research & Method in Education*, 10(3), 45–48.

Ertl, B. E. (2010). E-collaborative knowledge construction: Learning from computer-supported and virtual environments. *Information Science Reference/IGI Global*.

Flanagan, R. M., & Symonds, J. E. (2022). Children's self-talk in naturalistic classroom settings in middle childhood: A systematic literature review. *Educational Research Review*, 100432.

Foster, P., & Wigglesworth, G. (2016). Capturing accuracy in second language performance: The case for a weighted clause ratio. *Annual Review of Applied Linguistics*, 36, 98–116.

Goh, C. C. M., & Burns, A. (2012). *Teaching speaking: A holistic approach*. Cambridge University Press.

Hall, A. (2007). Vygotsky goes online: Learning design from a socio-cultural perspective. *Learning and Socio-Cultural Theory: Exploring Modern Vygotskian Perspectives International Workshop 2007*, 1(1), 6.

Hassett, D. D. (2008). Teacher flexibility and judgment: A multidynamic literacy theory. *Journal of Early Childhood Literacy*, 8(3), 295–327.

Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching and Teacher Education*, 11(1), 33–49.

Hedge, T. (2001). *Teaching and learning in the language classroom* (Vol. 106). Oxford university press Oxford, UK.

Herrera-Pavo, M. Á. (2021). Collaborative learning for virtual higher education. *Learning, Culture and Social Interaction*, 28, 100437.

Jaramillo, J. A. (1996). Vygotsky's sociocultural theory and contributions to the development of constructivist curricula. *Education*, 117(1), 133–141.

Kameda, T., & Nakanishi, D. (2003). Does social/cultural learning increase human adaptability?: Rogers's question revisited. *Evolution and Human Behavior*, 24(4), 242–260.

Lasley, T. J. (1992). Promoting teacher reflection. *Journal of Staff Development*, 13(1), 24–29.

Leba, S. M. R., Butarbutar, R., & Werang, B. R. (2021). Exploring the English Learning Strategies of an Indigenous Papuan Learner of Indonesia. *Qualitative Report*, 26(9).

Lian, H., Huai, M., Farh, J.-L., Huang, J.-C., Lee, C., & Chao, M. M. (2022). Leader unethical pro-organizational behavior and employee unethical conduct: Social learning of moral disengagement as a behavioral principle. *Journal of Management*, 48(2), 350–379.

Lidz, C. S., & Gindis, B. (2003). Dynamic Assessment of the Evolving Cognitive. Vygotsky's Educational Theory in Cultural Context, 99.

Lidz, C. S., & Jepsen, R. H. (2000). The application of Cognitive Functions Scale (ACFS): An example of curriculum-based dynamic assessment. *Dynamic Assessment: Prevailing Models and Applications*, 6, 407–439.

Marnina, S. M. R. L., Butarbutar, R., & Florenzia, A. Factors Associated With Speaking English as a Foreign Language Effectively in Higher Education.

McCullough Chavis, A. (2011). Social learning theory and behavioral therapy: Considering human behaviors within individuals and families' social and cultural context. *Social Work in Public Health*, 26(5), 471–481.

McDill, E. L., & Rigsby, L. C. (1973). Structure and process in secondary schools: The academic impact of educational climates. Baltimore: Johns Hopkins University Press.

Mehnert, U. (1998). The effects of different lengths of time for planning on second language performance. *Studies in Second Language Acquisition*, 20(1), 83–108.

Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, 80(4), 252.

Pahl-Wostl, C., Tàbara, D., Bouwen, R., Craps, M., Dewulf, A., Mostert, E., Ridder, D., & Taillieu, T. (2008). The importance of social learning and culture for sustainable water management. *Ecological Economics*, 64(3), 484–495.

Scott, S., & Palincsar, A. (2013). Sociocultural theory.

Singh, J., Steele, K., & Singh, L. (2021). Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. *Journal of Educational Technology Systems*, 50(2), 140–171.

Souto-Manning, M. (2006). A Latina teacher's journal: Reflections on language, culture, literacy, and discourse practices. *Journal of Latinos and Education*, 5(4), 293–304.

Thornbury, S. (2005). How to teach speaking. Longman.

van Andel, C. E. E., Born, M. P., van den Broek, W. W., & Stegers-Jager, K. M. (2021). Learner ethnicity predicts social learning experiences, self-regulatory focus and grades. *Medical Education*.

Volman, M. (2021). The effects of using learners' funds of knowledge on educational outcomes in the social and personal domain. *Learning, Culture and Social Interaction*, 28, 100472.

Vygotsky, L. S., & Cole, M. (1978). Mind in society: Development of higher psychological processes. Harvard university press.

W Creswell, J. (2016). Research Design.: Qualitative, Quantitative, Mixed Methods Approaches. University Of Nebraska-Lincoln.

Weber, P., Lehr, C., & Gersch, M. (2014). Improving virtual collaborative learning through canonical action research. *Electronic Journal of E-Learning*, 12(4), pp326-338.

Wild, S., Chimento, M., McMahon, K., Farine, D. R., Sheldon, B. C., & Aplin, L. M. (2022). Complex foraging behaviours in wild birds emerge from social learning and recombination of components. *Philosophical Transactions of the Royal Society B*, 377(1843), 20200307.

Willems, J. (2005). Flexible Learning: Implications of "when-ever", "where-ever" and "what-ever." Taylor & Francis.

Yaghoubi, M., & Farrok, P. (2022). Investigating Iranian English Learners' Private Speech Across Proficiency Levels and Gender Based on Vygotsky's Sociocultural Theory. *Journal of Psycholinguistic Research*, 1–20.